AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A NO_x removal catalyst management unit ~~for use with a NO_x removal apparatus, the management unit being provided for managing a plurality of NO_x removal catalyst layers provided in a flue gas NO_x removal apparatus, characterized in that the management unit comprises~~ comprising:

a NO_x measurement means for determining NO_x concentrations on the inlet and outlet sides of respective NO_x removal catalyst layers;

a NH_3 measurement means for determining NH_3 concentrations on the inlet and outlet sides of the same NO_x removal catalyst layers; and

a percent NO_x removal determination means for determining percent NO_x removal (η) on the basis of an inlet mole ratio (i.e., inlet NH_3/inlet NO_x), which percent NO_x removal (η) is determined on the basis of the following equation (1):

$$\eta = \left(\frac{(inlet\ NH_3 - outlet\ NH_3)}{(inlet\ NH_3 - outlet\ NH_3 + outlet\ NO_x)} \right) \times 100 \times \frac{evaluation\ mole\ ratio}{inlet\ mole\ ratio} \qquad (1)$$

wherein:

the inlet mole ratio ~~being~~ is derived from ~~a NO_x concentration which is~~ a NO_x concentration as measured on the inlet side by means of said NO_x measurement means and an

~~NH_3 concentration which is an~~ NH_3 concentration as measured on the inlet side by means of said NH_3 measurement means;

~~an~~the inlet NH_3 concentration ~~which~~ is an NH_3 concentration as measured on the inlet side;

~~an~~the outlet NH_3 concentration ~~which~~ is an NH_3 concentration as measured on the outlet side;

~~a~~the outlet NO_x concentration ~~which~~ is a NO_x concentration as measured on the outlet side~~:~~; and

~~an~~the evaluation mole ratio ~~which~~ is predetermined for the purpose of evaluating respective NO_x removal catalyst layers or plurality of NO_x catalyst layers~~, wherein the percent NO_x removal (η) is determined on the basis of the following equation (1):~~

~~$\eta = \{(\text{inlet } NH_3 - \text{outlet } NH_3)/(\text{inlet } NH_3 - \text{outlet } NH_3 + \text{outlet } NO_x)\} \times 100 \times (\text{evaluation mole ratio}/\text{inlet mole ratio}) \quad (1)$~~.

2. (canceled).

3. (canceled).

4. (currently amended): A NO_x removal catalyst management unit according to claim 1 ~~for use with a NO_x removal apparatus~~, which management unit further includes transmission means for transmitting concentration values determined by the NO_x measurement means and the NH_3 measurement means to the percent NO_x removal determination means, wherein the percent

NO_x removal determination means determines the percent NO_x removal (η) of respective NO_x removal catalyst layers included in a plurality of flue gas NO_x removal apparatuses.

5. (currently amended): A method for managing a NO_x removal catalyst ~~for use with a NO_x removal apparatus, the method being provided for managing a plurality of NO_x removal catalyst layers provided in a flue gas NO_x removal apparatus, characterized in that the method comprises~~ comprising:

determining NO_x concentrations and NH_3 concentrations on the inlet and outlet sides of respective NO_x removal catalyst layers;

determining percent NO_x removal (η) on the basis of an inlet mole ratio (i.e., inlet NH_3/inlet NO_x); which percent NO_x removal (η) is determined on the basis of the following equation (1):

$$\eta = \left(\frac{(inlet\ NH_3 - outlet\ NH_3)}{(inlet\ NH_3 - outlet\ NH_3 + outlet\ NO_x} \right) \times 100 \times \frac{evaluation\ mole\ ratio}{inlet\ mole\ ratio} \qquad (1)$$

wherein:

~~an~~ the inlet NH_3 concentration ~~which~~ is an NH_3 concentration as measured on the inlet side;

~~an~~ the outlet NH_3 concentration ~~which~~ is an NH_3 concentration as measured on the outlet side;

~~a~~ the outlet NO_x concentration ~~which~~ is a NO_x concentration as measured on the outlet side~~;~~;

the inlet mole ratio is derived from a NO_x concentration as measured on the inlet side and an NH_3 concentration as measured on the inlet side; and

an evaluation mole ratio ~~which~~ is predetermined for the purpose of evaluating respective NO_x removal catalyst layers or plurality of NO_x catalyst layers; and

evaluating performance of respective NO_x removal catalyst layers on the basis of the percent NO_x removal (η)~~, the inlet mole ratio being derived from a NO_x concentration which is a NO_x concentration as measured on the inlet side and an NH_3 concentration which is an NH_3 concentration as measured on the inlet side; and wherein the percent NO_x removal (η) is determined on the basis of the following equation (1):~~

~~$\eta = \{(\text{inlet } NH_3 - \text{outlet } NH_3)/(\text{inlet } NH_3 - \text{outlet } NH_3 + \text{outlet } NO_x)\} \times 100 \times (\text{evaluation mole ratio}/\text{inlet mole ratio}) \quad (1)$~~.

6. (canceled).

7. (canceled).

8. (currently amended): A method according to claim 5 for managing a NO_x removal catalyst ~~for use with a NO_x removal apparatus~~, wherein the method further comprises performing restoration treatment of a NO_x removal catalyst layer having a catalytic performance deteriorated to a predetermined level, on the basis of results of performance evaluation of the respective NO_x removal catalyst layers.

9. (currently amended): A method according to claim 8 for managing a NO_x removal catalyst ~~for use with a NO_x removal apparatus~~, wherein the performance restoration treatment is replacement of the NO_x removal catalyst layer with a new NO_x removal catalyst layer, replacement of the NO_x removal catalyst layer with a regenerated NO_x removal catalyst layer, replacement of the NO_x removal catalyst layer with an NO_x removal catalyst layer inverted with respect to the direction of the flow of discharge gas, or replacement of the NO_x removal catalyst layer with an NO_x removal catalyst layer from which a deteriorated portion has been removed.

10. (currently amended): A method according to any of claims 5 and 8 for managing a NO_x removal catalyst ~~for use with a NO_x removal apparatus~~, wherein the method further comprises determining the percent NO_x removal of respective NO_x removal catalyst layers included in a plurality of flue gas NO_x removal apparatuses and evaluating catalytic performance of respective NO_x removal catalyst layers included in a plurality of flue gas NO_x removal apparatuses.

11. (canceled).

12. (currently amended): A method according to claim 9 for managing a NO_x removal catalyst ~~for use with a NO_x removal apparatus~~, wherein the method further comprises determining the percent NO_x removal of respective NO_x removal catalyst layers included in a plurality of flue gas NO_x removal apparatuses and evaluating catalytic performance of respective NO_x removal catalyst layers included in a plurality of flue gas NO_x removal apparatuses.